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10/564,953

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Tomiharu Hosaka

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EXAMINER

BUTCHER, BRIAN M

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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|------------------------------|--------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/564,953 | Applicant(s) HOSAKA ET AL. | |
| | Examiner BRIAN BUTCHER | Art Unit 2627 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7, 8, and 12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7, 8, and 12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 12 recites an "optical information recoding medium capable of recording a plurality of linear velocities; and comprises optical units". New claim 12 was drawn to "An optical information recording and reproduction system" which comprised "optical units". However, amended claim 12 is drawn to "An optical information recoding medium" which comprises "optical units". Currently, it is not clear whether the Applicant intends to claim a system or a medium.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7, 8, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsukawa in view of Mizuno.

Regarding **claim 7**, Matsukawa discloses "An optical information recording medium . . . the land and the groove" (page 2, paragraph [0026], lines 1 - 4, and figure 1), "the recording can be performed at a plurality of linear velocities; wherein the ratio of the maximum recordable linear speed to the minimum recordable linear speed has a value of 2 to 3" (page 3, paragraph [0045], lines 1 - 6, and figure 1 (Notice that 7.0

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m/sec (maximum recordable linear speed) divided by 3.49 m/sec (minimum recordable linear speed) equals slightly greater than 2 which falls with the range from 2 to 3.)), and "the recording or reproduction . . . in the land/groove structure" (page 1, paragraph [0013], lines 1 - 13, and figure 1). However, Matsukawa fails to disclose "the ratio of the amount of light reflected from a groove in an unrecorded state to the amount of light reflected from a land in an unrecorded state has a value of at least 1.08 and no more than 1.19", "the ratio of the groove half-value width to the track pitch is less than about 0.5 and greater than about 0.6; and the depth of the groove is from 40 to 65 nm".

In a similar field of endeavor, Mizuno discloses that is well known in the art for an optical recording medium to have a RGb (reflection before recording in groove) greater than RLb (reflection in land before recoding) (page 28, paragraph [0353] , lines 1 - 4), that the groove pitch can be adjusted from 0.6 to 0.8 μm (page 28, paragraph [0349], lines 1 - 2), that for the condition where RGb is greater than RLb, the groove width can be adjust from 0.4 to 0.5 μm (page 28, paragraph [0353], line 4 (Notice for a groove width of 0.41 μm divided by a groove pitch of 0.8 μm , for example, the ratio WG/TP is greater than 0.50/ less than 0.60 and for a groove width of 0.47 μm divided by a groove pitch of 0.8 μm , for example, the ratio WG/TP is less 0.60 and greater than 0.50.)), where the preferred groove depth is 33 nm to 66 nm based on a reference value of 1 for the refractive index of the material, and where a preferred groove depth from $\lambda/20n$ to $\lambda/10n$ where λ is the wavelength of the light illuminated onto the medium and n is the refractive index of the material at hand and an example of a groove depth from 25 to 40 nm is given. (pages 27 - 28, paragraphs [0348] – [0349] (Notice that the depth will fall in

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the range from 40 to 65 nm depending on the refractive index of the material being used in the storage medium.)).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the information storage medium of Matsukawa by specifically using the teachings in Mizuno to include "the ratio of the amount of light reflected from a groove in an unrecorded state to the amount of light reflected from a land in an unrecorded state has a value of at least 1.08 and no more than 1.19" because one having ordinary skill in the art would want to reduce jitter, to increase the modulation or to widen the width of amorphous marks to be recorded in the groove (see Mizuno page 28, paragraph [0353], lines 3 – 4). Also, it would have been obvious to modify the medium of Matsukawa by using the teachings in Mizuno to include "the ratio of the groove half-value width to the track pitch is less than about 0.5 and greater than about 0.6" because one would want to widen the width of amorphous marks to be recorded in the groove (see Mizuno page 28, paragraph [0353], lines 3 – 4). In addition, it would have been obvious to modify the medium of Matsukawa by using the teachings in Mizuno to include "the depth of the groove is from 40 to 65 nm" because one would want to ensure that a push-pull signal can be detected by a tracking servo and ensure that the tracking servo is stabilized during retrieving (see Mizuno pages 27 - 28, paragraphs [0348], lines 1 - 4).

Regarding **claim 8**, Matsukawa and Mizuno, the combination of hereinafter referenced as MM, disclose everything claimed as applied above (see claim 7), in addition, Matsukawa discloses that an information storage medium that is rotated in a

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read/write device and illuminated with a laser beam wavelength of 600 to 700 nm through an objective lens having a numerical aperture of 0.55 to 0.70 (page 3, paragraph [0041], lines 1 - 8, and figure 1 (Notice that the claimed wavelength of 660 ± 10 nm falls within the range from 600 to 700 nm and that the claimed numerical aperture of 0.6 ± 0.01 falls with the range from 0.55 to 0.70.)).

Regarding **claim 12**, MM disclose everything claimed as applied above (see claim 7 and claim 8), specifically, see the argument of claim 7 in regard to the recording medium of Matsukawa in which recording is performed at a plurality of linear velocities, see the argument of claim 8 in regard to the recording medium of Matsukawa being utilized with a read/write device having a laser beam wavelength from 600 to 700 nm and a lens with a numerical aperture from 0.55 to 0.70, and further see the argument of claim 7 in regard to the recording medium being recorded/reproduced when the ratio of maximum linear speed to minimum linear speed has a value falling within the range from 2 to 3.

Response to Arguments

Applicant's arguments filed December 10, 2008 have been fully considered but they are not persuasive.

Regarding **claims 7, 8, and 12**, rejected under 35 U.S.C. 103(a) as being unpatentable over Matsukawa in view of Mizuno, the Examiner maintains that independent claim 7 is rendered obvious by the combination of references for the following reasons: First, Mizuno's teaching of the possibilities of reducing jitter, increasing the modulation, and widening the width of the amorphous marks when the

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ratio R_{Gb}/R_{Lb} is greater than 1 provides three sufficient reasons for making the combination of Matsukawa and Mizuno. Second, it would have been obvious to one having ordinary skill in the art that the teaching of ' $R_{Gb} > R_{Lb}$ ' is not to be construed as having a reflectance ratio that is much larger or far removed from the value of 1, i.e. infinity. Applicant's specification supports this view in the prior art with the recitation of a conventional phase change disc having a reflected light ratio of about 1.05 (specification, page 2, lines 17 - 18). Although the range of "1.08 to 1.19" is not anticipated, it is obvious over the teaching of having a reflectance ratio of greater than 1 (see MPEP 2131.03, III. 'PRIOR ART WHICH TEACHES . . . ANTICIPATE THE CLAIMED RANGE'). Therefore, since there is an expectation of an advantage, in this case: reducing jitter, increasing modulation, or widening amorphous marks, one having ordinary skill in the art would be motivated to make the combination as reasoned above (see MPEP 2144, II. "THE EXPECTATION OF SOME ADVANTAGE IS THE STRONGEST RATIONALE FOR COMBINING REFERENCES").

In addition, the Examiner maintains that the Applicant has failed to clearly define the unexpected results as mentioned in Applicant's Remarks.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRIAN BUTCHER whose telephone number is (571)270-5575. The examiner can normally be reached on Monday – Friday from 6:30 AM to 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young, can be reached at (571) 272 - 7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/BMB/

March 26, 2009

/Wayne Young/

Supervisory Patent Examiner, Art Unit 2627